

SITE SENSITIVE UTILITIES

Conserve special site features and rural qualities through a creative combination of on-site and shared utility systems.

The norm for areas not served by central water and sewer systems is to insure that each lot be able to handle a home's water and wastewater requirements, including room for a second field in case of septic system failure. This practice encourages the standard subdivision approach of carving an entire site up into lots, rather than realizing the full natural or open space potential of the site as outlined in "Fitting into the Landscape (A1)." It also has worked to dictate a standard minimum lot size of one acre to handle the margins of safety required by the Department of Health.

However, there are many ways to reduce lot sizes so that we can permanently protect the natural assets of a site. These possibilities are well within the technical grasp of local engineers, are possible to achieve within existing health code requirements, and need not result in costly delays in approvals.

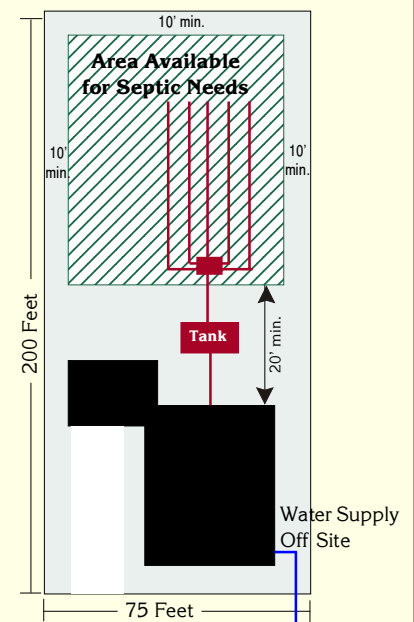
A Village-Scale Lot in a Rural Setting

We can have the best of both worlds. First, we get a lot big enough for our house, garage, gardens and expansion. But we also get built-in assurance that our house will always be in a unique and protected setting. Depending on where we are, that setting might include a stand of trees, a wetland, a significant view point, a trail segment, a meadow, a buffer to the highway, or a common green area.

The figure to the right illustrates a village-scale lot in a rural area. This lot would work equally well in a 1, 2, 3, 5, or 10 acre zone. The difference is that more land can be protected in areas zoned for low densities.

This layout is for 15,000 square feet or about one-third acre. The lot includes an expansive area for a septic system, sufficient to meet Health Department requirements for a four bedroom home (including a 100% field replacement space).

By using a community water supply, developers often gain considerable flexibility in maintaining certain site features and the rural setting.



Maintenance of community water and septic not an obstacle

1. Town reviews development proposals according to adopted goals and procedures.
2. Town agrees to or requests County Water and Wastewater Authority to assume water and wastewater facility responsibility.
3. Authority reviews (when requested) and Health Department approves plans.
4. Town Board or County Legislature establishes districts or zones of assessment.
5. Town or Authority assumes ownership of facilities and carries out maintenance.

Water and Wastewater Alternatives for Conservation Subdivisions

Towns, developers and health officials have many proven methods to solve water and wastewater requirements. Some of these solutions are illustrated below. Soil type, land cover, zoning, slopes and other variables make each site a unique challenge.

A Continuum of Choices

- Reduce lot size to one acre (in zones greater than one acre minimum), with balance placed in conservation use.
- Provide community wells with smaller average lot sizes, depending on slope, soil type, etc.*
- Provide shared septic systems, allowing flexible lot sizes, some 1/4 acre or less, or multi-family mixed with single-family.
- Use a combination of shared water system and common septic systems.
- Use a common septic system with a secondary treatment unit.
- Use a “package plant” treatment system which discharges into an intermittent or full flowing stream.

*Shared and community systems must be owned and operated by a municipality or County Water and Wastewater Authority.

... which can be applied in countless ways

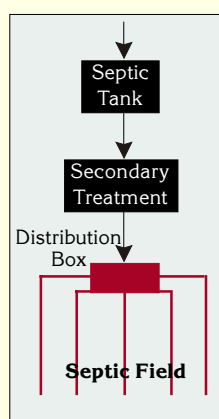


This proposed 54-acre subdivision in a two acre zone calls for only 20 acres to be used for housing. The development is served by a community well. Ten smaller homes, perhaps townhouses, are integrated into the site plan, as well as two estate lots. The small units discharge wastewater into a common septic field. Two houses share a septic system because of poor soils.



Innovative natural treatment systems use plants, fish and bacteria to digest wastewater in a greenhouse setting that resembles a botanical garden and school laboratory. This plant serves 1,600 residents in the City of South Burlington, Vermont.

Living Technologies, Inc.



Secondary Treatment to Enhance Septic Performance

Secondary in-ground treatment systems, costing about \$8-\$10/gallon (\$3,000 per household), are available to provide aerated, biological treatment, further reducing biological oxygen demand and suspended solids before the effluent enters the field.

The Dutchess County Health Department sends a flow confirmation letter to the New York State Department of Environmental Conservation before it issues a permit.

Sources:

Living Technologies, Inc., *A Living Machine*, 1999
 New York State, *Appendix 75-A Wastewater Treatment Standards - Individual Household Systems*, 1990
 New York State Department of Health, *Individual Residential Wastewater Treatment Systems: Design Handbook*, 1996
 Dutchess County Department of Health, *Water and Wastewater Systems: Design and Construction Standards*, 1998